ferrocene and its derivatives, osmium complex, tetrathiofulvalene, phenazine ethosulfate, benzoquinone and hexacyanoferrate.

17. The biosensor of claim **1**, wherein the working and counter electrodes are comprised of substantially identical material(s) within the reaction area.

18. The biosensor of claim **1**, wherein the gap space between the working electrode and the counter electrode is substantially constant within the reaction area.

19. The biosensor of claim **1**, wherein the electrode system is screen-printed onto the base member.

20. The biosensor of claim **19**, wherein the working and counter electrodes comprise carbon paste and the conductive leads comprise conductive silver paste.

21. The biosensor of claim **1**, wherein the base member and/or the laminate member is/are transparent.

22. The biosensor of claim **1**, wherein the reagent further comprises an enzyme that catalyzes a reaction involving an analyte of interest or a substrate that is involved in a reaction catalyzed by an enzyme of interest.

23. The biosensor of claim **1**, wherein the dielectric coating comprises 10–30% talc, 15–40% dicyclopentenyloxyethyl acrylate and 1–5% polydimethylsiloxane/silica adduct.

24. A method for assaying an analyte or an enzyme in a liquid sample, which method comprises:

a) contacting a liquid sample containing or suspected of containing an analyte with the sample application means of the biosensor of claim **1** under suitable conditions whereby an electric potential is generated; and

b) detecting the electric potential generated in step a), whereby the presence or amount of the analyte or enzyme in the sample liquid is assessed.

25. The method of claim **24**, wherein the volume of the liquid sample contacted with the biosensor is between about 1.0 microliter and about 3.0 microliters.

26. The method of claim **24**, wherein the volume of the liquid sample contacted with the biosensor is more than about 1.0 microliter, but wherein the volume of sample the enters the reaction area is between about 1.0 microliter to about 3.0 microliters.

27. The method of claim **24**, wherein the analyte to be detected is glucose.

28. The method of claim **27**, wherein the glucose level in the sample is between about 20 mg/dL to about 600 mg/dL.

29. The method of claim **24**, wherein the liquid soluble hydrophilic component comprises PVP.

30. A method for manufacturing the bioassay device of claim **1**, which method comprises:

applying the dielectric coating to the base member;

applying the electrode system to the base member and over a portion of the dielectric coating;

applying the insulating layer to the base member and over at least a portion of the electrode system but not within the reaction area;

applying the test reagent to at least a portion of the dielectric coating within the reaction area; and

adhering the laminate member to the insulating layer.

31. The method of claim **30**, wherein the dielectric coating, the electrode system and the insulating layer are applied via screen-printing.

32. The method of claim **30**, wherein the liquid soluble hydrophilic component comprises polyvinylpyridine.

33. The biosensor of claim **1**, wherein said insulating layer and said dielectric coating are comprised of different materials.

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